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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/825,591

Applicant(s)

GHANI, NASIR

Examiner

Hanh Phan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25-53 is/are allowed.
- 6) ☒ Claim(s) 1-3,5,7-9,11,13-15,17,19-21 and 23 is/are rejected.
- 7) ☒ Claim(s) 4,6,10,12,16,18,22 and 24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, **the feature “a computer coupled to the first switching fabric and the output switches for configuring the output switches to select which of the channels appearing on the input of the link receive interface are coupled to the optical transmission link, and for configuring the first switching fabric to select paths of signals appearing at the inputs of the first switching fabric through the first switching fabric” in claims 4, 6, 10, 12, 16, 18, 22, 24, 27, 31, 34, 38, 42, 47, 51 and 53** must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an

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application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 5, 7-9, 11, 13-15, 17, 19-21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakabayashi et al (US Patent No. 6,597,830) in view of Milton et al (US Patent No. 6,631,018).

Regarding claims 1 and 5, referring to Figure 17, Nakabayashi discloses a multiplexer comprising:

a plurality of output switches (i.e., 2x1 optical switches 216, Fig. 17), each output switch of the plurality of output switches (216) comprising a first input, a second input, and an output, the first input of said each output switch (213) being coupled to an added channel;

a link transmit interface (i.e., multiplexer 218, Fig. 17) comprising a plurality of inputs and an output, one input of the plurality of inputs of the link transmit interface (218) per output switch of the plurality of output switches (216), each input of the

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plurality of inputs of the link transmit interface (218) coupled to the output of the output switch (216) associated with said each input of the link transmit interface (218), the output of the link transmit interface (218) being capable of coupling channels appearing on the inputs of the link transmit interface (218) to an optical transmission link; and

a link receive interface (i.e., demultiplexer 212, Fig. 17) comprising an input and a plurality of outputs, one output of the plurality of outputs of the link receive interface (212) per output switch of the plurality of output switches (216), each output of the plurality of outputs of the link receive interface (212) coupled to the second input of the output switch (216) associated with said each output of the link receive interface (212), the link receive interface (212) being capable of coupling channels appearing on the input of the link receive interface (212) to the outputs of the link receive interface (212)(see col. 14, lines 37-47).

Nakabayashi differs from claims 1 and 5 in that he fails to teach a first switching fabric comprising a plurality of inputs and a plurality of outputs, a plurality of transponders, one transponder of the plurality of transponders per output of the plurality of outputs of the first switching fabric, each transponder of the plurality of transponders comprising an input and an output, the input of said each transponder connected to the output of the first switching fabric associated with each transponder. However, Milton in US Patent No. 6,631,018 teaches a switching fabric (15) (Fig. 3) comprising a plurality of inputs and a plurality of outputs, a plurality of transponders (14)(Fig. 3), one transponder (14) of the plurality of transponders per output of the plurality of outputs of the switching fabric (15), each transponder (14) of the plurality of transponders

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comprising an input and an output, the input of said each transponder (14) connected to the output of the switching fabric (15) associated with said each transponder (14)(see col. 5, lines 25-34). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the switching fabric comprising a plurality of inputs and a plurality of outputs, a plurality of transponders, one transponder of the plurality of transponders per output of the plurality of outputs of the switching fabric, each transponder of the plurality of transponders comprising an input and an output, the input of said each transponder connected to the output of the switching fabric associated with said each transponder as taught by Milton in the system of Nakabayashi. One of ordinary skill in the art would have been motivated to do this since Milton suggests in column 5, lines 25-34 that using such the switching fabric comprising a plurality of inputs and a plurality of outputs, a plurality of transponders, one transponder of the plurality of transponders per output of the plurality of outputs of the switching fabric, each transponder of the plurality of transponders comprising an input and an output, the input of said each transponder connected to the output of the switching fabric associated with each transponder have advantage of allowing selecting and distributing the wanted channels for adding and dropping at a node in the optical communication network.

Regarding claims 2, 8, 14 and 20, the combination of Nakabayashi and Milton teaches the first switching fabric is a spatial switching fabric (Fig. 3 of Milton).

Regarding claims 3, 9, 15 and 21, the combination of Nakabayashi and Milton teaches the first switching fabric is an optical spatial switching fabric capable of

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connecting any of the inputs of the plurality of inputs of the first switching fabric to any of the outputs of the plurality of outputs of the first switching fabric; each of the transponders comprises a fixed wavelength laser; the link receive interface is a dense wavelength division multiplexing fiber-optic interface coupling discrete wavelength channels appearing on the input of the link receive interface to the outputs of the link receive interface, one wavelength channel per output of the link receive interface; and the link transmit interface is a dense wavelength division multiplexing interface (see Figs. 3 and 4 of Milton and Fig. 17 of Nakabayashi).

Regarding claims 7 and 11, referring to Figure 17, Nakabayashi discloses a multiplexer comprising:

a plurality of input switches (i.e., 1x2 optical switches 213, Fig. 17), each input switch (213) of the plurality of input switches comprising an input, a first output, and a second output, the first output of said each input switch (213) being coupled to a dropped channel;

a link receive interface (i.e., demultiplexer 212, Fig. 17) comprising an input and a plurality of outputs, one output of the plurality of outputs of the link receive interface (212) per input switch (213) of the plurality of input switches, each output of the plurality of outputs of the link receive interface (212) coupled to the input of the input switch (213) associated with said each output of the link receive interface (212), the link receive interface (212) being capable of coupling channels appearing on the input of the link receive interface (212) to the outputs of the link receive interface (212); and

a link transmit interface (218) comprising a plurality of inputs and an output, one input of the plurality of inputs of the link transmit interface (218) per input switch (213) of the plurality of input switches, each input of the plurality of inputs of the link transmit interface (218) coupled to the second output of the input switch (213) associated with said each input of the link transmit interface (218), the output of the link transmit interface (218) being capable of coupling channels appearing on the plurality of inputs of the link transmit interface to an optical transmission link (col. 14, lines 37-47).

Nakabayashi differs from claims 7 and 11 in that he fails to teach a first switching fabric comprising a plurality of inputs and a plurality of outputs, a plurality of receivers, one receiver of the plurality of receivers per output of the plurality of outputs of the first switching fabric, each receiver of the plurality of receivers comprising an input coupled to the output of the first switching fabric associated with said each receiver. However, Milton in US Patent No. 6,631,018 teaches a switching fabric comprising a plurality of inputs and a plurality of outputs, a plurality of receivers, one receiver of the plurality of receivers per output of the plurality of outputs of the switching fabric, each receiver of the plurality of receivers comprising an input coupled to the output of the switching fabric associated with said each receiver (see Fig. 4, col. 5, lines 57-64). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the switching fabric comprising a plurality of inputs and a plurality of outputs, a plurality of receivers, one receiver of the plurality of receivers per output of the plurality of outputs of the switching fabric, each receiver of the plurality of receivers comprising an input coupled to the output of the switching fabric associated with said

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each receiver as taught by Milton in the system of Nakabayashi. One of ordinary skill in the art would have been motivated to do this since Milton suggests in column 5, lines 57-64 that using such the switching fabric comprising a plurality of inputs and a plurality of outputs, a plurality of receivers, one receiver of the plurality of receivers per output of the plurality of outputs of the switching fabric, each receiver of the plurality of receivers comprising an input coupled to the output of the switching fabric associated with said each receiver have advantage of allowing selecting and distributing the wanted channels for adding and dropping at a node in the optical communication network.

Regarding claims 13, 17, 19 and 23, referring to Figure 17, Nakabayashi discloses a multiplexer comprising:

a plurality of output switches (i.e., 2x1 optical switches 216, Fig. 17), each output switch of the plurality of output switches (216) comprising a first input, a second input, and an output, the first input of said each output switch (213) being coupled to an added channel;

a link transmit interface (i.e., multiplexer 218, Fig. 17) comprising a plurality of inputs and an output, one input of the plurality of inputs of the link transmit interface (218) per output switch of the plurality of output switches (216), each input of the plurality of inputs of the link transmit interface (218) coupled to the output of the output switch (216) associated with said each input of the link transmit interface (218), the output of the link transmit interface (218) being capable of coupling channels appearing on the inputs of the link transmit interface (218) to an optical transmission link;

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a plurality of input switches (i.e., 1x2 optical switches 213, Fig. 17), each input switch (213) of the plurality of input switches comprising an input, a first output, and a second output, the first output of said each input switch (213) being coupled to a dropped channel;

a link receive interface (i.e., demultiplexer 212, Fig. 17) comprising an input and a plurality of outputs, one output of the plurality of outputs of the link receive interface (212) per output switch of the plurality of output switches (216), each output of the plurality of outputs of the link receive interface (212) coupled to the second input of the output switch (216) associated with said each output of the link receive interface (212), the link receive interface (212) being capable of coupling channels appearing on the input of the link receive interface (212) to the outputs of the link receive interface (212)(see col. 14, lines 37-47).

Nakabayashi differs from claims 13, 17, 19 and 23 in that he fails to teach a first switching fabric comprising a plurality of inputs and a plurality of outputs, a plurality of transponders, one transponder of the plurality of transponders per output of the plurality of outputs of the first switching fabric, each transponder of the plurality of transponders comprising an input and an output, the input of said each transponder connected to the output of the first switching fabric associated with each transponder and a plurality of receivers, one receiver of the plurality of receivers per output of the plurality of outputs of the first switching fabric, each receiver of the plurality of receivers comprising an input coupled to the output of the first switching fabric associated with said each receiver. However, Milton in US Patent No. 6,631,018 teaches a switching fabric (15) (Fig. 3)

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comprising a plurality of inputs and a plurality of outputs, a plurality of transponders (14)(Fig. 3), one transponder (14) of the plurality of transponders per output of the plurality of outputs of the switching fabric (15), each transponder (14) of the plurality of transponders comprising an input and an output, the input of said each transponder (14) connected to the output of the switching fabric (15) associated with said each transponder (14) and a plurality of receivers, one receiver of the plurality of receivers per output of the plurality of outputs of the first switching fabric, each receiver of the plurality of receivers comprising an input coupled to the output of the first switching fabric associated with said each receiver (see Figs. 3 and 4, col. 5, lines 25-34 and lines 57-64). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the switching fabric comprising a plurality of inputs and a plurality of outputs, a plurality of transponders, one transponder of the plurality of transponders per output of the plurality of outputs of the switching fabric, each transponder of the plurality of transponders comprising an input and an output, the input of said each transponder connected to the output of the switching fabric associated with said each transponder and a plurality of receivers, one receiver of the plurality of receivers per output of the plurality of outputs of the first switching fabric, each receiver of the plurality of receivers comprising an input coupled to the output of the first switching fabric associated with said each receiver as taught by Milton in the system of Nakabayashi. One of ordinary skill in the art would have been motivated to do this since Milton suggests in column 5, lines 25-34 and lines 57-64 that using such the switching fabric comprising a plurality of inputs and a plurality of outputs, a plurality of

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transponders, one transponder of the plurality of transponders per output of the plurality of outputs of the switching fabric, each transponder of the plurality of transponders comprising an input and an output, the input of said each transponder connected to the output of the switching fabric associated with each transponder and a plurality of receivers, one receiver of the plurality of receivers per output of the plurality of outputs of the first switching fabric, each receiver of the plurality of receivers comprising an input coupled to the output of the first switching fabric associated with said each receiver have advantage of allowing selecting and distributing the wanted channels for adding and dropping at a node in the optical communication network.

Allowable Subject Matter

4. Claims 4, 6, 10, 12, 16, 18, 22 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. Claims 25-53 are allowed.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Phan whose telephone number is (571)272-3035.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.


HANH PHAN
PRIMARY EXAMINER